



**United States Department of Agriculture**  
**Forest Service**

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# **Hemlock Woolly Adelgid Suppression Project**

## **Draft Decision Notice and Finding of No Significant Impact**

**U.S. Forest Service, Allegheny National Forest**

**March 2016**

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## Introduction

In January of 2016, an interdisciplinary team at the Allegheny National Forest completed the Hemlock Woolly Adelgid Suppression Project Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. The environmental assessment was made available for review and public comment for 30 days. The team conducted the environmental assessment according to Council on Environmental Quality regulations<sup>1</sup> which state: “Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.”

This draft decision notice describes my decision to proceed with the Hemlock Woolly Adelgid Suppression Project, background information about the project, which alternative I selected, and the rationale supporting my decision. This document also includes my “Finding of No Significant Impact” (FONSI) to the human environment, which means no further environmental analysis is necessary in order to proceed with this project.

The Hemlock Woolly Adelgid Suppression Project Environmental Assessment (EA) and supporting resource reports are incorporated by reference in this document. The environmental assessment and this draft decision are available for download from the Allegheny National Forest website at <http://www.fs.usda.gov/projects/allegheny/landmanagement/projects> under the Hemlock Woolly Adelgid Suppression Project listing.

## Project Background

The Hemlock Woolly Adelgid (HWA) Suppression Project is part of a broader collaborative proposal occurring in the High Allegheny Unglaciaded Plateau (EPA ecoregion 212Ga). In 2012, recognizing that the hemlock woolly adelgid would soon spread to the Allegheny National Forest (Forest), the Forest Service and The Nature Conservancy organized a partnership of land owners and managers and other interested groups and organizations to develop the High Allegheny Unglaciaded Plateau collaborative strategy. That strategy identified the need for landscape-level conservation of the hemlock across all land ownerships in the High Allegheny Unglaciaded Plateau. The partnership designated priority hemlock conservation areas, which contain documented old-growth forest, recreation areas, research areas, important habitat areas, and high water quality streams.

In 2013, the hemlock woolly adelgid was first detected in the Allegheny National Forest following discovery in nearby Cook Forest State Park. Currently, this adelgid is known to occur in four geographically separate locations in the Forest. It has been confirmed on the northern and southern borders of the Forest and at locations in the Forest interior, including in old growth of the Tionesta Scenic and Research Natural Areas.

The primary focus of the HWA Suppression Project is to limit hemlock mortality from the hemlock woolly adelgid, and promote survival of ecologically and culturally important areas of hemlock across the Forest. We designed the HWA Suppression proposal to support the goals of the collaborative strategy that are relevant to the National Forest System lands and the goals of the 2007 Allegheny National Forest Land and Resource Management Plan (Forest Plan). In concert with these documents, the project is proposed to:

- ◆ Suppress hemlock woolly adelgid populations detected in high priority areas;

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<sup>1</sup> (40 CFR 1508.9(a))

- ◆ Prevent the spread of this adelgid to high priority areas, and
- ◆ Manage hemlock woolly adelgid populations across the Forest.

## Public Involvement

To inform the public, interest groups, tribes and agencies of this project, we used different methods of communication. We listed the HWA Suppression Project in the Allegheny National Forest's Quarterly Schedule of Proposed Actions, sent a letter of our proposal to interested parties, posted information on our Forest Service internet site and distributed a news release through the local media. The collaborative group had early input into the proposal and were also invited to comment on the proposed action.

The Council on Environmental Quality directs agencies to concentrate on analyzing issues that are truly significant to the action in question, rather than amassing needless detail. Primary concerns identified were analyzed in the EA to evaluate effects and determine the effectiveness of the alternatives in addressing the purpose and need and consistency with the Forest Plan. These concerns are listed below. Other concerns raised were either not relevant or site-specific to the project, or we were able to address them through design of the project. Please refer to the project record for a complete description of issues and how they were used in the planning and analysis process.

- Use of biological controls may impart unknown or unanticipated effects on the environment.
- Proposed treatments may introduce chemicals into the water supply.
- Use of the chemical imidacloprid could make its way into flowering flora and adversely affect bees.
- Use of imidacloprid could adversely affect recreating humans where chemicals are administered.

On January 28, 2016, we published a notice and comment opportunity in the Warren Times Observer and notified interested individuals, organizations, and agencies that the HWA Suppression Project Environmental Assessment was available for a 30-day comment period. We received comments from one organization and four individuals. We considered whether we had adequately addressed the topic of each of the comments and prepared a response to each one (Appendix A). Based on the analysis of comments, I concluded there were no new issues raised that might add a new alternative, or warrant additional analysis in the environmental assessment.

## Decision

After careful review of the HWA Suppression Project Environmental Assessment and all public comments and input received, I have decided to select alternative 2, the proposed action, for implementation. I have selected alternative 2 because it meets management direction provided in the Forest Plan and it is responsive to the specific purpose and need that I initially identified for this project as well as the public comments and issues. My reasons for choosing alternative 2 are explained in more detail in the "Reasons for My Decision" section on pages 8 and 9.

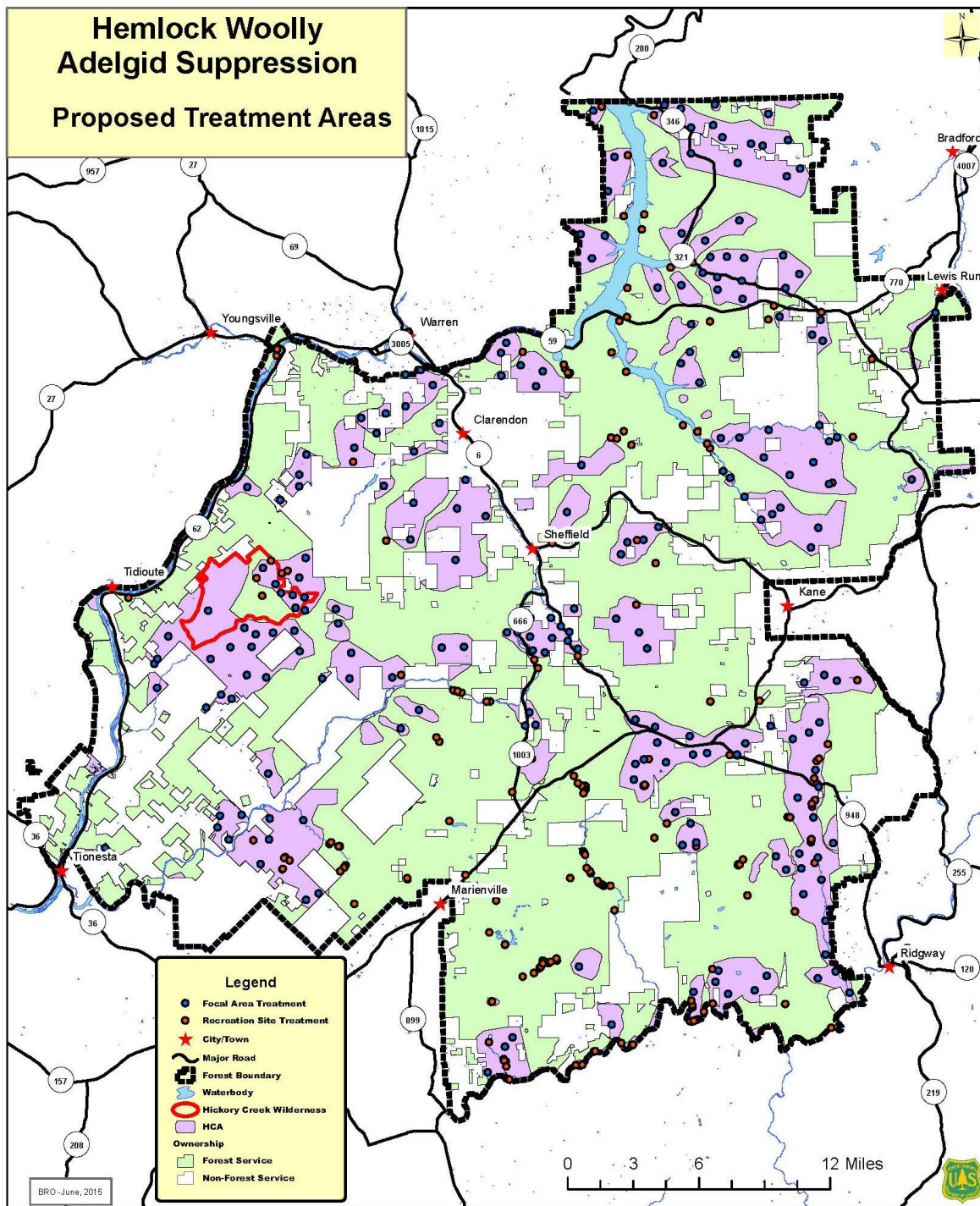


Figure 1. Treatment areas for hemlock woolly adelgid suppression on the Allegheny National Forest

## Details of the Selected Alternative

The selected alternative allows chemical and biological control treatments to manage infestations of the hemlock woolly adelgid in designated suppression treatment areas of the Allegheny National Forest, including federally designated wilderness areas, as summarized below. Please refer to the EA, pages 8 to 13, for additional details.

### Suppression Treatment Areas

Figure 1 shows suppression treatment areas—hemlock conservation areas, focal areas, and recreation sites—for hemlock woolly adelgid suppression on the Allegheny National Forest.

#### Hemlock Conservation Areas

We identified 82 hemlock conservation areas across the Allegheny National Forest. Project hemlock conservation areas are areas that contain a component of hemlock trees with ecological and social/cultural values; these areas total 147,471 acres, and include 6,335 acres within the Hickory Creek Wilderness. These 82 identified areas join a network of hemlock conservation areas that will be managed within the High Allegheny Unglaciated Plateau Cooperative Pest Management Area.

#### Focal Areas

Within the project hemlock conservation areas we isolated 222 hemlock focal areas, primarily along streams exhibiting high ecological values. Focal areas identified for biological and chemical treatment of selected individual hemlock trees total 30,752 acres. Focal areas selected for biological and chemical treatment of individual hemlock trees within the Hickory Creek Wilderness total 1,508 acres.

#### Recreation Sites

There are 201 recreation sites and facilities selected for suppression treatments that fall within and outside the project hemlock conservation areas. Recreation site individual hemlock tree treatment areas total 4,422 acres. Within Hickory Creek Wilderness, biological and chemical treatments can be implemented on individual trees within 25 acres along the boundary of Hearts Content Campground.

### Suppression Treatment Descriptions

#### Systemic Insecticides (Chemical Suppression)

Chemical control is approved using imidacloprid and/or dinotefuran. Chemical treatment applied to groups of infested hemlocks within suppression treatment areas will normally be the systemic insecticide imidacloprid injected into the soil around the base of the tree as a concentrated solution or a tablet. Imidacloprid may also be applied as a soil drench around individual hemlock trees, or injected into individual hemlock trunks. Soil drench involves transport of water to the site by means of trucks or all-terrain vehicles, and will tend to be used in treating isolated high-value hemlocks located near access roads. Direct stem injection of imidacloprid will be used within 10 feet of water or in areas of wet or saturated soils, to reduce potential impacts on aquatic and terrestrial organisms.

One treatment of imidacloprid can be effective for 7 years or more (Cowles 2009). Treatments will be repeated after effectiveness declines or if evidence of repeated infestation occurs. Treatment will cease when effective biological control agents become established or the adelgid threat is otherwise diminished, based on annual situation reports from Forest Health Protection.

In addition to imidacloprid, heavily infested large-diameter hemlock trees can have an application of dinotefuran (Safari®) applied directly to the bark of the tree at its base.

Dinotefuran treatment has greater mobility within the hemlock and is more quickly effective, but its efficacy is shorter-lived than imidacloprid. The strategy is to treat the trees in greatest need with dinotefuran so that the adelgid will be rapidly suppressed, allowing trees to recover to the point that they will be able to uptake the slower moving, but longer lasting imidacloprid.

Chemical controls will occur within hemlock conservation areas, integrated with biological controls, and be concentrated within focal areas and recreation sites. Any pesticides used in this project will be registered by the Environmental Protection Agency in full accordance with the Federal Insecticide, Fungicide, Rodenticide Act, as amended. Pesticide use will follow all EPA and Commonwealth of Pennsylvania pesticide application regulations and Forest Service handbook and manual direction.

### Biological Control

The selected alternative includes the release and establishment of predatory beetles as part of an integrated pest management strategy. Beetles are generally released in infested hemlock stands found along the leading edge of the infestation, or in areas where hemlocks are still healthy and hemlock woolly adelgid densities have not yet overcome the trees. The predator beetles are expected to take several years to establish reproducing populations.

Biological controls will be integrated with chemical controls, and be focused within focal areas and broad hemlock conservation areas. Each hemlock conservation area will be prioritized for biocontrol based on criteria such as degree of adelgid infestation and the health of the trees. Biological control agents will meet USDA risk assessment criteria for release (Hennessey 1995; Zilahi-Balogh G.M.G. 2001; Montgomery et al. 1997; Lu and Montgomery 2001; Butin et al. 2002).

### Integrated Pest Management

Integrated use of chemical and biological controls appears to be the most promising approach to sustaining healthy eastern hemlock trees in a landscape setting. Insecticide treatment prolongs hemlock crown health. Some hemlocks may be treated at a lower insecticide rate (repeated if necessary) to protect the crowns and new growth, potentially supporting healthy hemlock woolly adelgid populations, thereby supporting predatory beetles. Eventually, treated and nearby untreated hemlocks may be able to support sufficient populations of predatory beetles that hemlock woolly adelgid populations are reduced to the point that hemlock trees will survive (Mayfield et al. 2015).

These kinds of integrated approaches will continue to be implemented and evaluated while new management tools are developed for hemlock woolly adelgid control. This long-term adaptive approach will likely require a complex of natural enemies to maintain adelgid populations below damaging levels. Other emerging federally and state-approved biocontrols will also be considered for future use in the project area following the required environmental review process.

### Measures Designed to Avoid, Minimize, or Mitigate Adverse Effects

The selected alternative is designed with a variety of measures intended to avoid, minimize, or mitigate known or potential adverse effects to various resources. Table 1 lists project design measures specific to this project that are incorporated into the selected alternative.

**Table 1. Project design associated with the selected alternative**

Project Design Measures
1. In order to minimize potential for off-site movement of insecticides and ensure maximum efficacy, chemical treatments should occur when hemlock trees are actively growing.
2. Forest Plan standards and guidelines related to pesticide application would be adhered to (USDA

Project Design Measures	
	Forest Service 2007a). All insecticides would be applied using label regulations and restrictions. The lowest effective label rate would be used.
3.	Treatment areas would be reviewed to determine the presence of predominantly sandy, stoney, or gravelly (i.e., highly permeable) soils with little organic matter. If these conditions exist near water bodies, chemical treatment would be restricted to stem injection or bark application treatments.
4.	Direct stem injection of imidacloprid would be used within 10 feet of water bodies or in areas of wet or saturated soils, to reduce potential impacts on aquatic and terrestrial organisms.
5.	Due to its high mobility, dinotefuran would only be applied via direct trunk spray.
6.	Avoid soil drench and trunk spray treatments during rainfall, or if significant rainfall is expected within 24 hours of application.
7.	Dinotefuran would not be applied to rain-saturated bark, during rainfall, or if significant rainfall is expected within 24 hours of application.
8.	In aquatic habitats including waterbodies, streams, wetlands, springs, seeps, or vernal pools (as defined in the Forest Plan (USDA Forest Service 2007a, page 77), vehicles (including all-terrain vehicles) used to access isolated high-value hemlocks would remain on roadways, trails, or parking areas to prevent damage to riparian vegetation, soil, water quality, and aquatic habitat.
9.	Prior to application of chemical treatment, hemlock conservation areas would be reviewed by a wildlife biologist and botanist to determine the presence of threatened, endangered, or sensitive species. Within occupied habitat, or on sites where there is a high probability of a species occurring, modifications to treatment type and timing would be made if necessary to avoid impacts. These measures may include limitations on vehicle entry, establishment of seasonal restrictions, or changes to treatment type.
10.	Application of herbicides and other pesticides will be planned to avoid or minimize direct and indirect effects to known, occupied threatened, endangered, or sensitive bat hibernacula and maternity roosts.
11.	Hemlock conservation areas would be reviewed for the presence of any aquatic habitats including waterbodies, streams, wetlands, springs, seeps, or vernal pools (as defined in the Forest Plan, USDA FS 2007a, page 77). Where these conditions exist, chemical treatment would be restricted to stem injection or bark application treatments within 10 feet of water bodies or in areas of wet or saturated soils. Where applicable, Forest Plan buffers and restrictions related to activities associated with treatment application would be implemented.
12.	Prior to implementation, hemlock woolly adelgid treatments and use of all-terrain vehicles off designated roads and trails would be coordinated with the botanist and archaeologist to ensure protection of known plant species or cultural resources of concern.
13.	Prior to moving any equipment to a work site, between work sites, and from the Allegheny National Forest, all equipment must be free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. This includes off-road equipment such as all-terrain vehicles and trailers used for transport of materials. Equipment will be considered free of soil, seed, and other such debris when a visual inspection does not disclose such material. Cleaning of equipment may entail brushing or hosing with water or compressed air. Detergents or other cleaning agents are not to be used unless they are applied at a car wash or other facility equipped for water catchment and treatment. Equipment is not to be cleaned in streams, ditches, or other waterways. Cleaning of equipment on National Forest System land would be authorized at specified locations.
14.	In order to protect the public and forest workers in areas being treated, all treatment sites would be posted with signs at the time of treatment, indicating the active ingredient, date and time of application, and contact information for additional information. These signs would remain in place for 1 month.
15.	Pesticides would not be applied along trails or in high use areas such as recreation sites and facilities during weekends or holidays.
16.	An information and education program would be implemented for wilderness visitors to inform them about the hemlock woolly adelgid, the treatment schedule and locations, and the expected results for hemlock should an infestation occur in the wilderness.

## Project-level Monitoring

The selected alternative incorporates monitoring to help ensure that the appropriate and most effective treatments are being used. When responding to a forest threat such as an invasive insect, it is essential

that treatments adapt to changing conditions in the forest. As areas of infestation are identified they will be evaluated for treatment within the broader-landscape context. Table 2 includes specific monitoring measures for this project.

**Table 2. Project monitoring associated with the selected alternative**

Project Monitoring Requirements	
1.	Detailed records would be maintained and reported to databases of record for establishment and dispersal of biocontrols (predator beetles).
2.	Detailed records would be maintained and reported to databases of record for every tree treated with systemic insecticides on the Allegheny National Forest.
3.	Treatment efficacy would be monitored by periodically assessing overall crown health of treated trees and hemlock woolly adelgid population trends in affected areas.
4.	Annual monitoring for new hemlock woolly adelgid infestation would continue in priority hemlock conservation areas considered to be highest risk for new infestation due to proximity to roads and drainages, and recreation users.
5.	Water quality and macroinvertebrate monitoring is expected to occur in areas that would receive chemical treatments other than stem injection to help validate the effectiveness of the Forest's approach to minimizing risks to aquatic biota from this action. If unexpected monitoring results occur and insecticides are found to be contaminating aquatic environments, protocols for insecticide applications would be adjusted as necessary to reduce the risk of contamination back to the level consistent with this analysis.

## Reasons for My Decision

My decision is based on a thorough review of the environmental assessment and its supporting documentation. In making my decision, I considered the purpose and need, consistency with the Forest Plan and the 2007 ROD, and all public comments and resource issues identified during the planning process.

My decision reflects a solution that meets the purpose and need and supports collaboration, continued learning, and flexibility through an integrated approach to pest management. I believe the ability to monitor and adjust management actions to changing conditions on the ground is the most critical element for success in our efforts to combat the hemlock woolly adelgid. The selected alternative provides a suitable variety of techniques to be implemented and evaluated while new management tools are developed for hemlock woolly adelgid control. I consider this long-term adaptive approach to be the most promising approach to sustaining healthy eastern hemlock trees in a landscape setting.

Infestations of the hemlock woolly adelgid have been confirmed on the Allegheny National Forest and studies suggest that 50 percent of the Forest will have hemlock woolly adelgid populations established in the next 20 years (EA pp. 17-19). Without treatment, risk models predict we will lose 31 percent of the overall eastern hemlock basal area<sup>2</sup> on the Forest in the next 15 years (EA p. 6). There is a need to act now. Implementation of my decision is crucial in the effort to reduce the hemlock woolly adelgid population and preserve some of the mature and old hemlocks in riparian zones and high value sites on the Forest. My decision will help to protect many plants and animals associated with the unique

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<sup>2</sup> The common term used to describe the average amount of an area occupied by tree stems. It is defined as the total cross-sectional area of all stems in a stand measured at breast height, and expressed as per unit of land area (typically square feet per acre).

habitats present due to the presence of eastern hemlock. If suppression treatments are not implemented, these habitats will be degraded or lost over time.

From review of the information presented in the EA and project file, I believe my decision can and will be implemented in an environmentally sound manner. Neither of the insecticides approved for use under my decision are thought to have any effects on plants, and, under approved treatment methods and implementation of project design measures, will have little effect on terrestrial or aquatic wildlife species or their habitats. Direct stem injection is required to reduce potential impacts in areas where the approved chemicals could potentially harm aquatic invertebrates. Overall exposure to pollinating insects such as honeybees is low due to the remote location, forested environment, and treatment methods that are approved under my decision (EA pp. 28-60). Risk of groundwater contamination and plausible exposure by the general public is low, and approved application methods and project design measures further minimize the potential for effects on surface and groundwater interaction and human health (EA pp. 15-16 and 60-65).

I am aware of the EPA's current review of certain neonicotinoid pesticides, including one that assesses non-agricultural uses of imidacloprid. A preliminary risk assessment of imidacloprid and three other neonicotinoids, including dinotefuron, are scheduled for completion in December 2016. When these risk assessments are made available, Allegheny National Forest staff and USFS State and Private Forestry entomologists will review these for new information relevant to the use of these pesticides on selected hemlock trees in forested settings. We will incorporate relevant new information into treatment protocols, which will be adjusted as necessary in order to minimize potential non-target effects to pollinators.

My decision is based on the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. This is demonstrated through use of on-going discussions and collaborative research in assessing comprehensive approaches to sustaining healthy eastern hemlock trees on the landscape. Treatment of hemlock woolly adelgid on the Allegheny National Forest will continue to adapt and evolve through incorporation of project monitoring data and new and emerging research.

## **Other Alternatives Considered**

In addition to the selected alternative, I considered a No Action alternative. The interdisciplinary team evaluated one other alternative during the analysis process, but it was eliminated from detailed consideration in the environmental assessment (EA p. 14).

### **Alternative 1 - No Action**

The no-action alternative proposed no activities to suppress hemlock woolly adelgid populations, prevent their establishment, or manage their populations across the Forest. It assumed that hemlock woolly adelgid infestation and population expansion would continue unabated, with no intervention actions by the Forest Service or others. This alternative helped us compare environmental conditions and trends that exist in the project area now with how they would change if we implemented the action alternative.

I did not select this alternative because it does not meet the Purpose and Need for this project and does not address the goals, standards and guidelines in the Forest Plan (EA pp. 6-7).

Further, without intervention to manage hemlock woolly adelgid populations on the Forest, we anticipate hemlock mortality in the long term nearing 100 percent. Eastern hemlock is a foundation species and other flora and fauna associated with hemlock in these unique habitats are present due to the presence of eastern hemlock. The loss of a foundation species is likely to lead to rapid, possibly irreversible shifts in biological diversity and ecosystem-wide changes in structure and function. This could have broad reaching consequences on forest resources and landscape health (EA p. 1, 22).

## Finding of No Significant Impact

I have reviewed the Council on Environmental Quality Regulations for significance (40 CFR 1508.27) and have determined that this decision is not a major Federal action that would significantly affect the quality of the human environment, either individually or cumulatively. Preparation of an environmental impact statement pursuant to Section 102 (2)(c) of the National Environmental Policy Act of 1969 is not required. This determination is based on the following factors as outlined in 40 CFR 1508.27.

### Context

This project is limited in scope and duration. Activities associated with my decision will be confined to selected treatment areas within the Allegheny National Forest where hemlock woolly adelgid suppression actions will be implemented. Individual trees will be chemically treated, and of the nearly 9 million eastern hemlock trees greater than 5 inches diameter that are estimated to occur on the Forest, we estimate less than 5,000 might be treated within a given year. Suppression treatments will be limited to those actions disclosed in this decision, the EA, and their respective appendices. Further, this action is consistent with Forest Plan goals, standards and guidelines allowing insect and disease control for protection of health and safety, adjacent land values, and heritage assets; and supporting integrated pest management methods used to minimize or prevent development of pest problems (EA pp. 6-7). Effects are local in nature and are not likely to significantly affect regional or national resources.

Short-term negative effects are addressed through implementation of project design measures developed specifically for this project. The project's design measures minimize and avoid negative impacts to the extent that such impacts are almost undetectable and immeasurable, even at the local level (see EA pages 11-12 for design measures and EA pages 15-70 for effects to resources).

### Intensity

Intensity refers to the severity, extent, or quantity of the expected project impacts. I have thoroughly considered any adverse and beneficial effects to each resource area as per 40 CFR 1508.27. The agency has taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions. The following factors were considered to evaluate intensity. My finding of no significant impact is based on the context of the project and intensity of effects using the 10 factors identified in 40 CFR 1508.27(b).

- 1) Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on the balance the effects will be beneficial.**

I considered the past, present, and reasonably foreseeable actions in conjunction with beneficial and adverse impacts associated with activities as presented in the EA, resource reports and project record. These impacts are within the range of effects identified in the Allegheny National Forest Land and

Resource Management Plan. I conclude that the specific direct, indirect, and cumulative effects of the selected alternative, alternative 2, are not significant and this action does not rely on beneficial effects to override any adverse environmental effects.

Because my selected alternative incorporates the design measures listed on page 12 of the environmental assessment; there will be some resources where the project as designed will have little to no measurable effects; such as with rare plants (EA pp. 31-37) and soil resources. Project design measures and best management practices for limiting soil and groundwater effects include restrictions on the use of insecticides based on soil drainage characteristics, proximity to water and water/ponding frequency, and avoiding conditions that might lead to soil and water contamination (EA p. 62).

For some resources, implementing alternative 2 will exhibit both beneficial and adverse effects, which were discussed in sufficient detail to make my determination. The environmental assessment focuses more effort on those resource areas where there were some type of predicted adverse effect and provides sufficient information to determine that this project will not have a significant impact (beneficial or adverse). There are examples of this in the wildlife resource sections where you will see some adverse short-term effects such as short-term disturbance to foraging or dispersing individuals, along with some long-term indirect beneficial effects such as habitat and community stability (wildlife report and EA pp. 37-60).

## **2) The degree to which the proposed action affects public health or safety.**

It is my determination that the selected activities will have no significant effects on public health and safety. Insecticide application will follow Forest plan standards and guidelines and be applied using label regulations and restrictions. The lowest effective label rate will be used. Where highly permeable soils exist near water bodies or in areas of wet or saturated soils, chemical treatment will be restricted to direct stem injection or bark application treatments. Pesticides would not be applied along trails or in high use areas such as recreation sites and facilities during weekends or holidays. During and for one month following treatment, treatment sites will be posted with signs indicating the active ingredient, date and time of application, and contact information for additional information (EA p. 12).

The overall benefit from applying insecticides to individual hemlock trees and releasing predatory beetles that specifically target hemlock woolly adelgid and have little to no effect on other organisms is a reduction in the probability of complete long-term mortality in hemlock trees on the Forest (EA pp. 19, 22), with a benefit to ecosystem processes associated with riparian and upland habitats and aquatic and terrestrial species diversity (see wildlife and soil reports and EA, pp. 37-60 and 60-65).

## **3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

The Allegheny National Forest heritage program determined the selected hemlock woolly adelgid treatments do not have the potential to cause effects to historic properties located within the Forest boundaries. The Pennsylvania State Historic Preservation Office and consulting American Indian Tribes have no concerns regarding the project (project file).

There are no park lands or prime farmlands within the project area. No long-term measurable negative effects to riparian areas or wetlands are expected with this decision because we will avoid highly sensitive areas and project design measures and best management practices will be applied to allow activities to proceed without greatly increasing the risk of unwanted effects to soil, ground water, and surface water (EA p. 12 and p. 62).

Treatments are proposed on Forest Service lands within the Allegheny and Clarion Wild and Scenic River Corridors. These areas both contain Hemlock Conservation Areas that contain hemlocks valued for ecological and aesthetic reasons. Treatment of individual hemlock trees and biological controls will help sustain hemlocks and shade in these riparian corridors, as well as helping sustain the scenic integrity in these Wild and Scenic River Corridors. Selective treatment of eastern hemlock trees is consistent with the management goals for these corridors.

Hickory Creek Wilderness is one of the valued places on the Forest, and Hearts Content Campground, located northeast of the wilderness, is popular with primitive campers. Hickory Creek Wilderness contains second- and third-growth forests with a hemlock component along stream corridors and in the uplands near the boundary with Hearts Content Campground. My selected alternative is expected to have impacts to the untrammeled quality and wilderness solitude of the Hickory Creek Wilderness, but an overall low risk to wilderness character. It is my determination, and the determination of the R-9 Regional Forester, that the need and benefits of treating hemlock woolly adelgid in the identified areas within the wilderness, along with treatments on adjacent lands, offers the best chance of the native hemlock plant communities being maintained in order to preserve the natural quality of the wilderness. The selected treatments to help protect the native hemlock from the non-native hemlock woolly adelgid will help to preserve an essential and long-term natural condition of the wilderness, more than the temporary treatment actions will cause adverse impacts to the untrammeled quality and wilderness solitude (EA pp. 65-70 and Minimum Requirement Decision Guide).

The Tionesta Research Natural Area (RNA) was administratively designated in 1940, in order to protect ecologically significant features, specifically, remnant old growth forest dominated by eastern hemlock and American beech. It has been characterized as the “largest virgin forest in the hemlock-white pine/northern hardwoods region of North America” (USDA-FS 2007b, p. 2-43). Within this management area, vegetation management is permitted only when needed to maintain or restore the unique feature(s) or vegetation types for which the RNA was established or to control non-native species (USDA-FS 2007a, p. 163). The Forest Service Manual for management of RNAs (FSM 4000, Chapter 4060- Research Facilities and Areas, WO Amendment 4000-2005-3) emphasizes protecting RNAs against human activities that directly or indirectly modify the integrity of ecological processes, and removing exotic plants or animals to the extent practicable.

My decision to apply selective application of insecticides to individual hemlock trees and biological controls will help address the direct threat of exotic hemlock woolly adelgid to unique vegetation communities for which the Tionesta RNA was established. All activities that occur within the RNA will be consistent with the Allegheny National Forest Plan and Forest Service Manual direction, and reviewed by appropriate National Forest System and Northern Research Station staff to ensure activities are consistent with long term research objectives for the RNA.

The North Country National Scenic Trail traverses across the Allegheny National Forest and transects hemlock woolly adelgid treatment areas. It is designated and managed as a special area because it links outstanding scenic, natural, recreational, historic and cultural areas in 7 northern tier states. My decision is consistent with Forest Plan goals, standards and guidelines for management of the North Country National Scenic Trail and the trail will not be affected by closure or re-routes. Project design measures further reduce potential effects and inform trail users. Pesticides would not be applied along trails or in high use areas such as recreation sites and facilities during weekends or holidays. Also, during and for one month following treatment, treatment sites will be posted with signs indicating the active ingredient, date and time of application, and contact information for additional information (EA p. 12).

**4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.**

I have concluded the effects of the selected alternative on the quality of the human environment are not highly controversial. This conclusion is based on public involvement and support of the treatment activities, and the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. The project file includes relevant literature citations, references to science, and monitoring results that were used in the project analysis to support this decision as well as consideration of other scientific information as provided from other scientists, organizations and agencies.

**5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.**

The planned actions are similar to chemical and biological treatments implemented for many years in other areas on National Forest System, state, county and private lands. Effects will be similar to those in the other areas where treatments have been implemented. The potential effects of the insecticides have been scientifically documented in many studies (project record literature cited and individual resource reports). It is my conclusion that there are no unique or unusual characteristics of the area, which have not been previously encountered, which will constitute an unknown risk to the human environment.

**6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**

The planned management actions are similar to actions implemented without significant impacts in other areas on National Forest System, state, county and private lands. The selected alternative is not setting a precedent for future actions of significant effects. Management practices are consistent with management direction in the Forest Plan. This action does not represent a decision in principle about future considerations.

**7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

The combined effects of past, present, and reasonably foreseeable future actions were considered and are summarized in each resources cumulative effects analysis. Past actions considered in the cumulative effects analysis include those that contributed to establishing the baseline conditions of the project area today as described in the cumulative effects section of the resource reports. There are no indications of significant cumulative effects to the environment.

**8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in the National Register of Historic Places or may cause loss or destruction of significant cultural or historical resources.**

Applying insecticides to individual hemlock trees and releasing predatory beetles that specifically target hemlock woolly adelgid have no potential to impact infrastructure or heritage resources on the Forest. The Pennsylvania State Historic Preservation Office and consulting American Indian Tribes have no concerns regarding the project (project file).

**9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act.**

Threatened, endangered, and sensitive plant and animal species were considered in the botany and terrestrial wildlife and aquatic resource reports and summarized in the EA (pp. 28-37 and 37-60). The selected alternative will not adversely affect the viability of any threatened or endangered wildlife, fish, or plant species that may occur in the area (EA p. 56). Threatened and endangered species determinations are listed in Table 3. A biological assessment and evaluation (BAE) is provided in the project file for additional information.

**Table 3. Threatened and Endangered Species Determinations**

Species	Status*	Determination	Rationale
Small-whorled pogonia	T	No effect	Species is not hemlock dependent, has not been documented on the Allegheny National Forest and is not likely to be affected by hemlock mortality or suppression treatments
Northeastern bulrush	E	No effect	No dens or documented populations in the project area
Northern long-eared bat	T	May affect, not likely to adversely affect	Species are not hemlock dependent, but may be affected by hemlock mortality and associated changes in terrestrial or aquatic habitat and/or proposed actions
Clubshell mussel	E		
Northern riffleshell mussel	E		
Rabbitsfoot	T		
Rayed-bean mussel	E		
Sheepnose	E		
Snuffbox	E		

\*E = Endangered, T = Threatened

#### **10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.**

The selected alternative is consistent with the Forest Plan and applicable laws, regulations, and policies (see individual resource reports). The Forest Plan was developed in accordance with the National Forest Management Act (NFMA - 16 U.S.C.1604, et seq.) and the 1982 planning regulations. The selected alternative also supports the National Forest Management Act, which gives the Forest Service statutory responsibility to provide the ecological conditions to both maintain the diversity of plant and animal communities and support the persistence of most native species in the plan area.

Pesticides used in this project would be registered by the Environmental Protection Agency in full accordance with the Federal Insecticide, Fungicide, Rodenticide Act, as amended. Pesticide use would follow all EPA and Commonwealth of Pennsylvania pesticide application regulations and Forest Service handbook and manual direction. Biological control agents would meet USDA risk assessment criteria for release (EA p. 11).

## **Findings Required by Other Laws and Regulations**

Each resource analysis report provides a section on how the Allegheny Woolly Adelgid Suppression Project is consistent with the laws and regulations relevant to that resource. After reviewing each report and the environmental assessment, I find my decision to implement alternative 2 complies with all applicable laws, regulations, and policies. See discussions below.

## National Forest Management Act (NFMA)

Project activities are consistent with the NFMA (16 USC 1604 (i)) and the Forest Plan for the Allegheny National Forests (2007) and will provide for diversity of plant and animal communities based on the suitability and capability of the specific land area to meet overall multiple-use objectives (16 USC 1604 (g)(3)(B)). Alternative 2 is designed to be implemented in a manner that will provide for a diversity of vegetation, plants, wildlife, and soil and water resources on the Allegheny National Forest. (See the environmental assessment analyses for these resources on pages 16, 28, 37, and 60; refer to resource specialist reports and the Wildlife Biological Assessment and Evaluation in the project file).

The selected treatments are specifically designed to meet the intent of the Forest Plan. Forest Plan standards for forest pest management allow insect and disease control to protect health and safety, adjacent land values, and heritage assets, and support integrated pest management methods used to minimize or prevent development of pest problems. Guidelines promote development of a strategy based on the most current treatment options, infestation levels, and prioritization of treatment areas at such time the hemlock woolly adelgid is discovered on the Allegheny National Forest (EA p. 7). The environmental analysis and project record provide detail on consistency with the Forest Plan.

## Endangered Species Act of 1973, as amended

The Endangered Species Act (ESA) (16 USC 35 §§1531 et seq. 1988) provides for the protection and conservation of threatened and endangered plant and animal species. The selected alternative was assessed to determine effects on threatened and endangered plant and animal species. The selected alternative is consistent with the Endangered Species Act (terrestrial and aquatic and botany resource reports). See item 9 in the “Finding of No Significant Impact” section.

## Executive Order 13186 - Migratory Birds

Under the Migratory Bird Treaty Act (MBTA), taking, killing, or possessing migratory birds is unlawful. On January 10, 2001, President William Clinton signed E.O. 13186, directing executive departments and agencies to take certain actions to further implement the MBTA (FR Vol. 66, No. 11, January 17, 2001). The U.S. Forest Service and U.S. Fish and Wildlife Service have entered into a memorandum of understanding to promote the conservation of migratory birds as a direct response to E.O. 13186 (USDA Forest Service and USDI Fish and Wildlife Service 2008).

The effects of agency actions on migratory birds were evaluated within the NEPA analysis process, focusing on species of management concerns along with their priority habitat and key risk factors. Some hemlock mortality will occur with implementation of the selected alternative, but the integrated strategies included in the selected alternative will reduce risks and help to maintain a landscape level hemlock component and the abundance, diversity and Forest viability of hemlock associated migratory birds. As a result, and considering Forest Plan standards and project design measures will reduce impacts to migratory birds, the selected alternative is in compliance with the Migratory Bird Treaty Act (EA pp. 39-60).

## Clean Water Act

The Clean Water Act (CWA) is a Federal statute that requires States and tribes to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 U.S.C. 466 et seq., Title I, Section 101). The terrestrial and aquatic and soil resources analyses disclose the potential effects of the activities proposed on water quality and aquatic and riparian habitat and function. I recognize that selected treatments will protect only a fraction of the hemlock trees on the Forest, and that, even with

implementation of the selected alternative, water and aquatic resources will still be impacted to some degree. The selected alternative will reduce negative impacts over those impacts anticipated if no HWA suppression treatments are implemented. This project incorporates Forest Plan standards and guidelines for protection of riparian resources and includes project design measures to ensure management activities maintain watershed conditions to the extent possible (EA pp. 12, 48-60, and 62-65).

## **Executive Order 11988 - Floodplain Management, and Executive Order 11990 - Protection of Wetlands**

This project proposes no development within wetlands or floodplains and the effects analysis shows there would be no downstream adverse effects that will modify wetlands or floodplains; therefore, the selected alternative is consistent with these executive orders. Forest Plan standards and guidelines and project design will minimize the impact to floodplains and wetlands in accordance with E.O. 11988 and E.O. 11990.

## **Executive Order 13112 – Invasive Species**

The selected alternative will meet the intent stated in Executive Order 13112 through direct control of invasive hemlock woolly adelgid populations, and through indirect control of noxious weeds through implementation of project design measures (EA pp. 22-28, 31-37 and p.12).

## **National Historic Preservation Act, American Indian Religious Freedom Act, and Native American Graves Protection and Repatriation Act**

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of their activities and programs on historic properties and provide the Advisory Council on Historic Preservation the opportunity to comment on all agency undertakings. We consulted with the Pennsylvania State Historic Preservation Office area American Indian Tribes during the analysis process and they have no concerns regarding the project (project file). The Allegheny National Forest heritage program determined the selected hemlock woolly adelgid treatments do not have the potential to cause effects to historic properties located within the Forest boundaries. My decision is consistent with provisions of the NHPA, the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, and the Native American Graves Protection and Repatriation Act.

## **Executive Order 12898 - Environmental Justice**

“Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority and Low-Income Populations” (59 FR 32), issued in 1994, ordered Federal agencies to identify and address the issues of environmental justice (i.e., adverse human health and environmental effects of agency programs that disproportionately impact minority and low-income populations). Public involvement did not identify any adversely impacted local minority or low-income populations. My decision is not expected to adversely impact minority or low-income populations.

## **Objection Opportunities**

This decision is subject to the objection process pursuant to 36 CFR 218, subparts A and B. This project was originally proposed in March 2015 during a “scoping period” and an opportunity for

public comment on the environmental assessment was provided in January 2016. For this project, individuals or organizations who submitted written comments on the environmental assessment in response to either the scoping period or the comment period will be considered to have standing to object under 36 CFR 218, Subparts A and B.

The objection must contain the minimum content requirements specified in §218.8(d) and incorporation of documents by reference is permitted only as provided in §218.8(b). It is the objector's responsibility to ensure timely filing of a written objection with the reviewing officer pursuant to §218.9. All objections are available for public inspection during and after the objection process.

The objection must meet the content requirements of 36 CFR 218.8(d), and include the following information:

- The objector's name and address, with a telephone number or email address, if available;
- A signature or other verification of authorship upon request (a scanned signature for Email may be filed with the objection);
- When multiple names are listed on an objection, identification of the lead objector as defined in 36 CFR 218.2 (verification of the identity of the lead objector shall be provided upon request);
- The name of the project being objected to, the name and title of the responsible official, and the name of the national forest and ranger district on which the project will be implemented;
- A description of those aspects of the project addressed by the objection, including specific issues related to the project and, if applicable, how the objector believes the environmental analysis or draft decision specifically violates law, regulation, or policy; suggested remedies that would resolve the objection; and supporting reasons for the reviewing officer to consider;
- A statement that demonstrates the connection between prior specific written comments on the particular project or activity and the content of the objection, unless the objection concerns an issue that arose after the designated opportunity for formal comment.

Incomplete responses to these requirements make review of an objection difficult and are conditions under which the reviewing officer may set aside an objection pursuant to 36 CFR 218.10.

The following address should be used for objections sent by regular mail or by private carrier or hand delivery:

Administrative Review Staff  
USDA Forest Service, Eastern Region  
626 E. Wisconsin Avenue  
Milwaukee, WI 53202

Office hours are Monday through Friday, 8:00 a.m. to 4:30 p.m., excluding holidays.

Electronic objections must be submitted via an email to [objections-eastern-region@fs.fed.us](mailto:objections-eastern-region@fs.fed.us), with "Allegheny Hemlock Woolly Adelgid Suppression Project" typed in the subject line. Electronic objections must be submitted in MS Word (.doc or .docx) or rich text format (.rtf).

The telephone number for faxed objections is 414-944-3963, Attn: Administrative Review Staff, Region 9, USDA Forest Service, Eastern Regional Office.

## Final Decision

If no objections are filed within the 45-day time period for this draft decision, then a final decision may occur on, but not before, the 5th business day following the end of the objection filing period. If an objection is filed, a final decision will not be signed until all concerns and instructions (identified by the Reviewing Officer) have been addressed (36 CFR 218.12[b]).

For additional information concerning this decision, please refer to the Allegheny National Forest web site for the project - <http://www.fs.usda.gov/projects/allegheny/landmanagement/projects>. Questions regarding this decision should be sent to Andrea Hille at the Allegheny National Forest Supervisors Office, 4 Farm Colony Drive, Warren, PA 16365, or by phone (814) 728-6161 or e-mail ([ahille@fs.fed.us](mailto:ahille@fs.fed.us)).

## Contact Information and Responsible Official

I, Forest Supervisor Sherry Tune, am the responsible official for this decision.

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SHERRY TUNE  
Forest Supervisor  
Allegheny National Forest

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Date

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## Appendix A – Comments received during the designated 30-day comment period

The 30-day comment period for the Hemlock Woolly Adelgid Suppression Project EA ended on February 29, 2016. Comments were received from four respondents during the designated comment period, and from one respondent following the designated comment period. The comment letters are part of the project file and available for review by the public.

### Respondent 01

#### Comment 01

I'm all for treating HWA, but to me it does not seem appropriate within the TSRNA. Research Natural Areas are a place to study natural processes. They act as a baseline or "control" area, for comparisons to forests where we apply treatments. They are a place for non-manipulative research. You could argue that HWA are not natural so they require human intervention. You could make the same case for all non-native invasive species. There may be some National direction that addresses invasives in RNAs, I don't know.

#### *Response*

We agree that Research Natural Areas (RNAs) are important places to study natural processes and that activities that occur within these areas ought to be as non-manipulative as possible. The Tionesta Research Natural Area was administratively designated in 1940, in order to protect ecologically significant features. It has been characterized as the “largest virgin forest in the hemlock-white pine/northern hardwoods region of North America” (USDA-FS 2007b, p. 2-43). Within this management area, vegetation management is permitted only when needed to maintain or restore the unique feature(s) or vegetation types for which the RNA was established or to control non-native species (USDA-FS 2007a, p. 163). Selective application of insecticides to individual hemlock trees and biological controls will help address the direct threat (exotic hemlock woolly adelgid) to unique vegetation communities for which the Tionesta RNA was established (remnant old growth forest dominated by eastern hemlock and American beech).

The Forest Service Manual for management of RNAs (FSM 4000, Chapter 4060- Research Facilities and Areas, WO Amendment 4000-2005-3) emphasizes protecting RNAs against human activities that directly or indirectly modify the integrity of ecological processes, and removing exotic plants or animals to the extent practicable. Where pest management activities are prescribed, they shall be as specific as possible against target organisms and induce minimal impact to other components of the ecosystem. The release of biological control organisms for exotic species control should be carefully considered to avoid the introduction of other exotic species. All activities that occur within the RNA will be consistent with the Allegheny National Forest Plan and Forest Service Manual direction, and reviewed by appropriate National Forest System and Northern Research Station staff to ensure activities are consistent with long term research objectives for the RNA.

## **Respondent 02**

### **Comment 01**

The Pennsylvania Department of Conservation and Natural Resources Bureau of Forestry's Division of Forest Health supports the USDA Forest Service Allegheny National Forest's (ANF) efforts to manage hemlock woolly adelgid (HWA) infestations. These efforts are consistent with the Bureau of Forestry's "Eastern Hemlock Conservation Plan" for Pennsylvania. Throughout the ANF there are critical high value hemlock landscapes (focal areas) that need protection. The DCNR Bureau of Forestry Division of Forest Health supports Alternative 2 – The Proposed Action.

#### *Response*

Thank you for your support.

## **Respondent 03**

### **Comment 01**

I am concerned about the chemicals used and any problems that could occur from them. My first thought was to let nature (even though it is a non-native insect) take its course. God bless your efforts and studies. It sure is a complicated problem and I pray it doesn't turn into a new problem fixing the current one.

#### *Response*

Risk assessments of different pesticides used in the Forest Service are prepared to assess and address the consequences of pesticide use in Forest Service programs as it relates to human health and ecological effects. Potential effects of the insecticides imidacloprid and dinotefuran are discussed in resource analyses throughout the EA and are based on information provided in risk assessments prepared by Syracuse Environmental Research Associates, Inc. (2005, 2009), using peer-reviewed articles from the open scientific literature and current Environmental Protection Agency documents. The risk assessments contain detailed analysis of the potential effects of each pesticide. They also address potential risks from different treatment methods that are sometimes associated with use of proposed pesticides, including soil injection, tree injection, and bark applications.

Any pesticides used in this project would be registered by the Environmental Protection Agency in full accordance with the Federal Insecticide, Fungicide, Rodenticide Act, as amended. Pesticide use would follow all EPA and Commonwealth of Pennsylvania pesticide application regulations and Forest Service handbook and manual direction. Biological control agents would meet USDA risk assessment criteria for release. Forest Plan standards and guidelines and project specific design criteria would further reduce or eliminate the likelihood of adverse effects associated with treatment. Finally, all selective use of pesticides in this project would occur in a targeted manner to individual hemlock trees that are deemed important to treat, in order to conserve important hemlock values.

See also response to comment 04-02.

## **Respondent 04**

### **Comment 01**

I want to start off by saying I have no problem with the Environmental Assessment document. It is an exhaustive effort to show the Forest Service is taking the decision to use imidacloprid on an ecosystem-scale seriously. It shows consideration for pollinators (hemlock is wind pollinated), stream

runoff, and the densities of Hemlock Woolly Adelgid infestations likely encountered. In particular, I found Appendix A and B extremely informative about Forest Service's decisionmaking and a good indication of their ability to fight this destructive pest.

*Response*

Thank you for your comment.

**Comment 02**

My comment is to inform them of the EPA's Re-evaluation of imidacloprid and other neonicotinoid insecticides if it is not known already. I recently attended an EPA webinar on the subject and officials responded to my question about large scale use of imidacloprid on Hemlock Woolly Adelgid. They said they were aware of its use in forestry, but weren't prepared to answer the question about its risks until the release of the full re-evaluation update in December 2016. Will you be able to take into account their findings when the document is released in December 2016? Human health risks and risk to freshwater ecosystems would also likely be included in this document.

*Response*

Thank you for providing this information. The Allegheny National Forest is fully committed to pollinator conservation, as an integral component of forest and non-forest ecosystem health. We are aware of the EPA's current review of certain neonicotinoid pesticides, including imidicloprid. A preliminary assessment of risk relative to agricultural uses of imidicloprid was made available for public comment in January 2016. A follow up assessment that assesses non-agricultural uses (including forestry) of imidicloprid is slated to be completed in December 2016. Preliminary risk assessments for three other neonicotinoids, including dinotefuron, are also scheduled for completion in December 2016. When these risk assessments are made available, Allegheny National Forest staff and USFS State and Private Forestry entomologists will review these for new information relevant to the use of these pesticides on selected hemlock trees in forested settings. This new information would be incorporated into treatment protocols, which would be adjusted as necessary in order to minimize potential non-target effects to pollinators.

**Respondent 05 (outside designated comment period)**

**Comment 01**

Every effort should be made to control HWA before it gains a strong foothold on the ANF. Hemlocks are a tremendous asset to the State of Pennsylvania and for future generations. The loss of hemlock would be tragic for all of the reasons that we are aware of already.

*Response*

Thank you for your comment.